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Contents

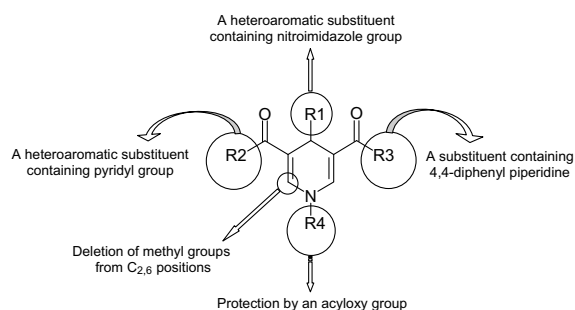
PERSPECTIVE

Dihydropyridines and atypical MDR: A novel perspective of designing general reversal agents for both typical and atypical MDR

pp 8329–8334

Ramin Miri^{*}, Ahmadreza Mehdipour

1,4-Dihydropyridines (DHPs) are a class of MDR reversals. The various investigations on reversing effect of DHPs shows that they can be a potential effective class on both typical and atypical MDR.

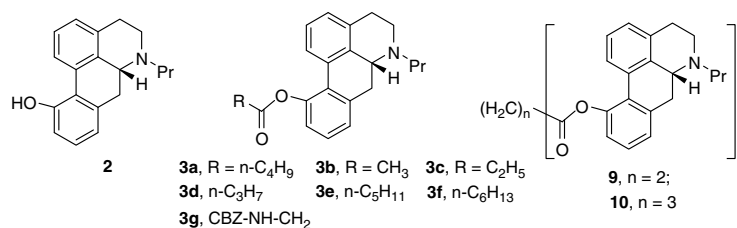


ARTICLES

N-Propylnoraporphin-11-O-yl carboxylic esters as potent dopamine D₂ and serotonin 5-HT_{1A} receptor dual ligands

pp 8335–8338

Zhili Liu, Xuetao Chen, Peihua Sun, Leiping Yu, Xuechu Zhen^{*}, Ao Zhang^{*}

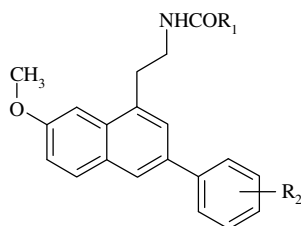


A small series of N-propylnoraporphin-11-O-yl carboxylic esters with variant ester lengths were synthesized. Although the diesters **9** and **10** were inactive for the D₂ receptor, all of the aporphine monoesters displayed high dual binding profile for the D₂ and 5-HT_{1A} receptors, with butyryl ester **3d** as the best possessing the highest potency for both receptors, with K_i values of 55 and 12 nM, respectively.

Synthesis of 3-phenylnaphthalenic derivatives as new selective MT₂ melatoninerbic ligands

pp 8339–8348

Sophie Poissonnier-Durieux, Mohamed Ettaoussi, Basile Pérès, Jean A. Boutin, Valérie Audinot, Caroline Bennejean, Philippe Delagrangre, Daniel Henri Caignard, Pierre Renard, Pascal Berthelot, Daniel Lesieur, Saïd Yous^{*}



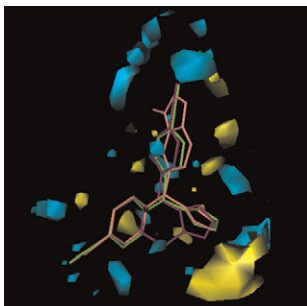
R₁ = CH₃, c-C₄H₇

R₂ = CH₂OH, CH₂OCH₃, CHO, COOCH₃, COOH, CH₂Br, CH₂I, CH₂NH₂, NH₂, N(CH₃)₂, NHCOOC₂H₅, NHCOCH₃

CYP19 (aromatase): Exploring the scaffold flexibility for novel selective inhibitors

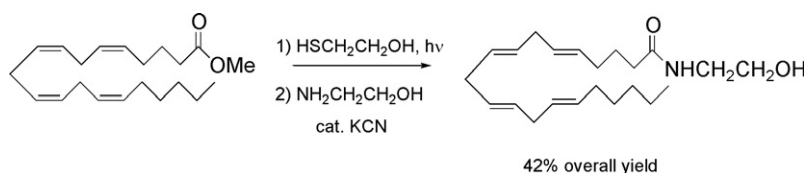
pp 8349–8358

Sabrina Castellano*, Giorgio Stefancich, Rino Ragno*, Katarzyna Schewe, Marisabella Santoriello, Antonia Caroli, Rolf W. Hartmann, Gianluca Sbardella

**Synthesis of all-*trans* anandamide: A substrate for fatty acid amide hydrolase with dual effects on rabbit platelet activation**

pp 8359–8365

Carla Ferreri*, Dimitris Anagnostopoulos, Ioannis N. Lykakis, Chrysostomos Chatgililoglu, Athanassia Siafaka-Kapadai *

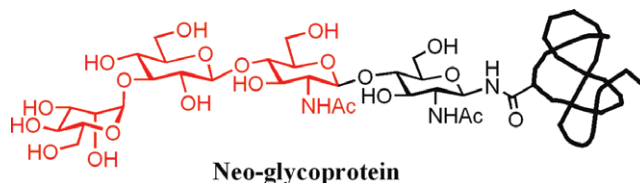


The first synthesis of all-*trans* anandamide is reported together with its effects on FAAH and rabbit platelet aggregation. The all-*trans* PUFA approach can represent an antisense strategy in a chemical biology approach focusing on the *trans* geometry, which is the opposite of the *cis* configuration present in the natural lipids.

Chemoenzymatic synthesis of N-linked neoglycoproteins through a chitinase-catalyzed transglycosylation

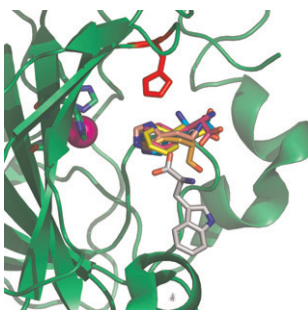
pp 8366–8372

Cishan Li, Wei Huang, Lai-Xi Wang*

**Carbonic anhydrase activators: Kinetic and X-ray crystallographic study for the interaction of D- and L-tryptophan with the mammalian isoforms I–XIV**

pp 8373–8378

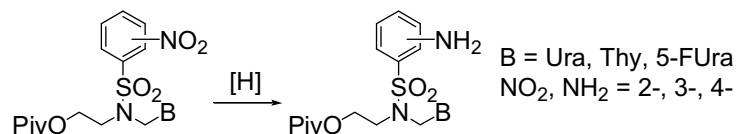
Claudia Temperini, Alessio Innocenti, Andrea Scozzafava, Claudiu T. Supuran*



Synthesis and antiviral evaluation of acyclic azanucleosides developed from sulfanilamide as a lead structure

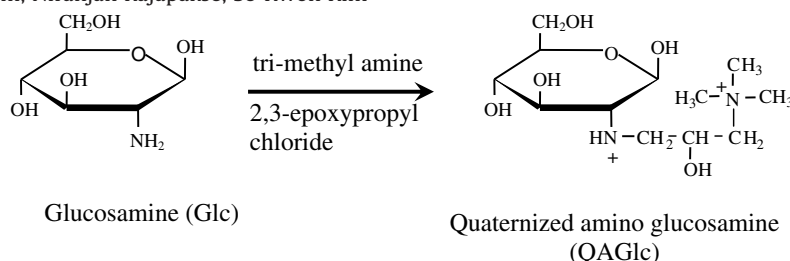
pp 8379–8389

Rafał Gawin, Erik De Clercq, Lieve Naesens, Mariola Koszytkowska-Stawińska*

**Suppression of cytokine production in lipopolysaccharide-stimulated mouse macrophages by novel cationic glucosamine derivative involves down-regulation of NF-κB and MAPK expressions**

pp 8390–8396

Eresha Mendis, Moon-Moo Kim, Niranjan Rajapakse, Se-Kwon Kim*

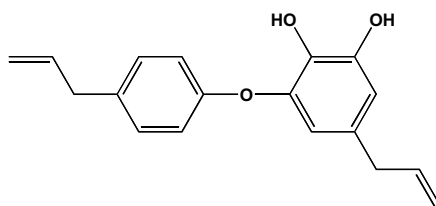


Quaternized amino glucosamine (QAGlc), a newly synthesized cationic glucosamine (Glc) derivative was found to inhibit LPS-stimulated production of IL-1β, IL-6, TNF-α, and PGE₂ in RAW264.7, mouse macrophages via suppression of NF-κB pathway and MAPKs.

Obovatol inhibits colorectal cancer growth by inhibiting tumor cell proliferation and inducing apoptosis

pp 8397–8402

Su-Kyung Lee, Hye-Nan Kim, Yeong-Rim Kang, Chang Woo Lee, Hwan-Mook Kim, Dong Cho Han, Jongheon Shin, KiHwan Bae, Byoung-Mog Kwon*

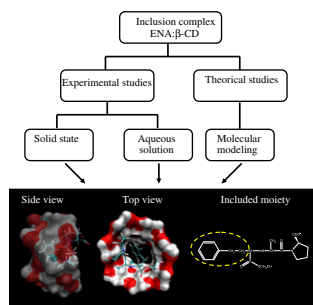


Obovatol inhibited tumor growth and exhibited more potent anti-tumor activity than honokiol in nude mice experiment bearing SW620-incubated tumor.

Specific binding capacity of β-cyclodextrin with *cis* and *trans* enalapril: Physicochemical characterization and structural studies by molecular modeling

pp 8403–8412

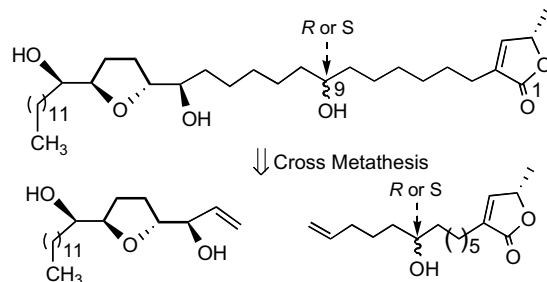
Ariana Zoppi, Mario A. Quevedo, Marcela R. Longhi*



Synthesis and antitumor activity of C-9 epimers of the tetrahydrofuran containing acetogenin 4-deoxyannoreticuin

pp 8413–8418

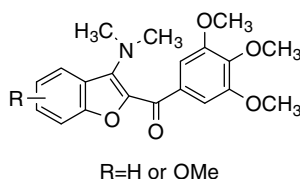
Feng Wang, Akira Kawamura, David R. Mootoo*



Synthesis and biological evaluation of 2-(3',4',5'-trimethoxybenzoyl)-3-*N,N*-dimethylamino benzo[*b*]furan derivatives as inhibitors of tubulin polymerization

pp 8419–8426

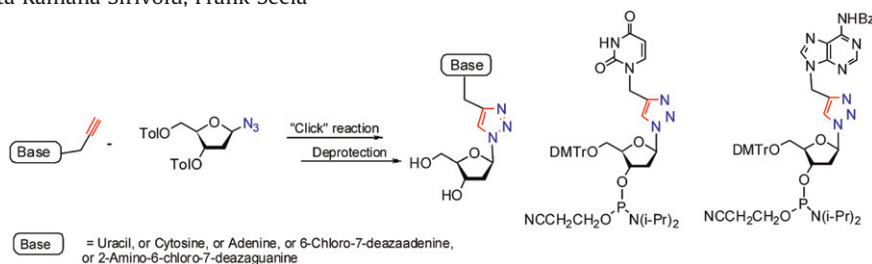
Romeo Romagnoli*, Pier Giovanni Baraldi*, Taradas Sarkar, Maria Dora Carrion, Olga Cruz-Lopez, Carlota Lopez Cara, Manlio Tolomeo, Stefania Grimaudo, Antonietta Di Cristina, Maria Rosaria Pipitone, Jan Balzarini, Roberto Gambari, Lampronti Ilaria, Roberto Saletti, Andrea Brancale, Ernest Hamel



Nucleosides and oligonucleotides containing 1,2,3-triazole residues with nucleobase tethers: Synthesis via the azide-alkyne 'click' reaction

pp 8427–8439

Padmaja Chittepu, Venkata Ramana Sirivolu, Frank Seela*

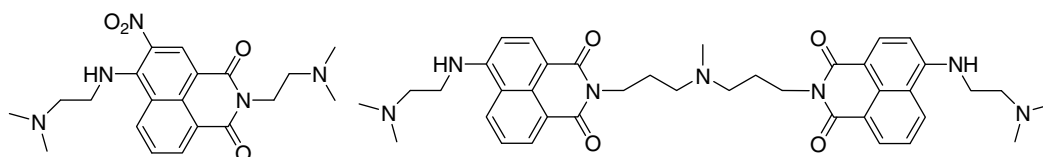


A series of novel 1,2,3-triazole nucleosides linked to DNA nucleobases were synthesized and used to evaluate their antiviral activity. The 1,2,3-triazole nucleosides of adenine and uracil were incorporated into DNA using phosphoramidite building blocks.

Design, synthesis, and biological evaluation of new mitonafide derivatives as potential antitumor drugs

pp 8440–8446

Ippolito Antonini*, Rosaria Volpini, Diego Dal Ben, Catia Lambertucci, Gloria Cristalli

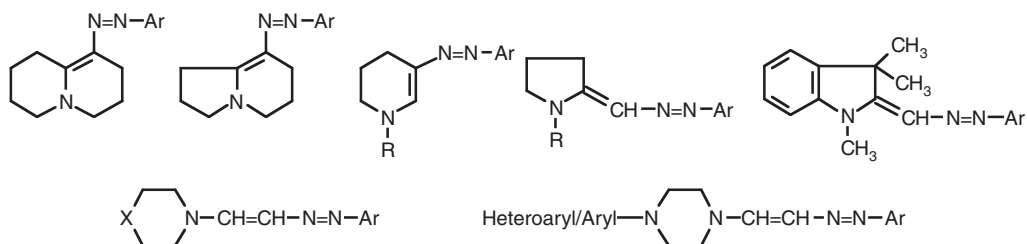


2-[2-(Dimethylamino)ethyl]-6-[[2-(dimethylamino)ethyl]amino]-5-nitro-1H-benzo[de]isoquinolin-1,3(2H)-dione and 1,7-bis[6-[[2-(dimethylamino)ethyl]amino]-1,3-dioxo-1H-benzo[de]isoquinolin-2(3H)-yl]-4-methyl-4-azaheptane.

Antimicrobial and cytotoxic arylazoenamines. Part III: Antiviral activity of selected classes of arylazoenamines

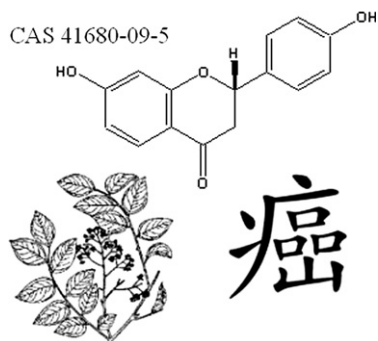
pp 8447–8465

Michele Tonelli, Vito Boido, Caterina Canu, Anna Sparatore, Fabio Sparatore*, Maria Silvia Paneni, Maurizio Fermeglia, Sabrina Pricl, Paolo La Colla, Laura Casula, Cristina Ibba, David Collu, Roberta Loddo

**Screening of herbal constituents for aromatase inhibitory activity**

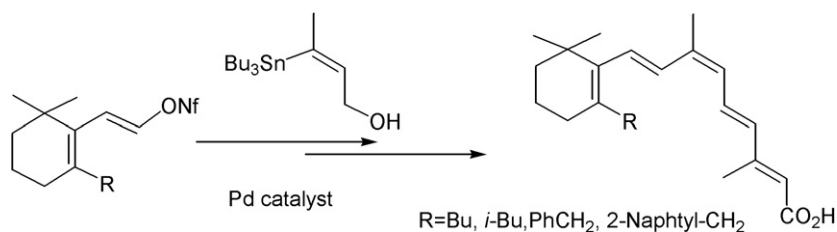
pp 8466–8470

S. Paoletta, G. B. Steventon, D. Wildeboer, T. M. Ehrman, P. J. Hylands, D. J. Barlow*

**Preparation and biological evaluation of 5-substituted retinoic acids**

pp 8471–8481

Akimori Wada*, Naomi Matsuura, Yukari Mizuguchi, Kimie Nakagawa, Masayoshi Ito, Toshio Okano*

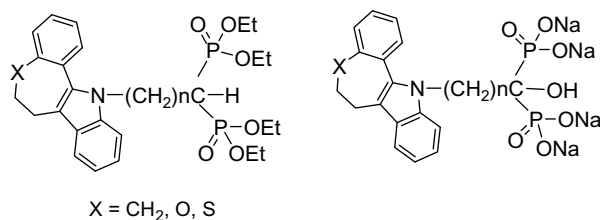


A novel method for a synthesis of 5-substituted retinoic acids analogs was developed by a palladium catalyzed cross-coupling reaction of enol nonaflate with alkenylstannane. The biological activities of these analogs were evaluated.

Synthesis and biological evaluation of indolyl bisphosphonates as anti-bone resorptive and anti-leishmanial agents

pp 8482–8491

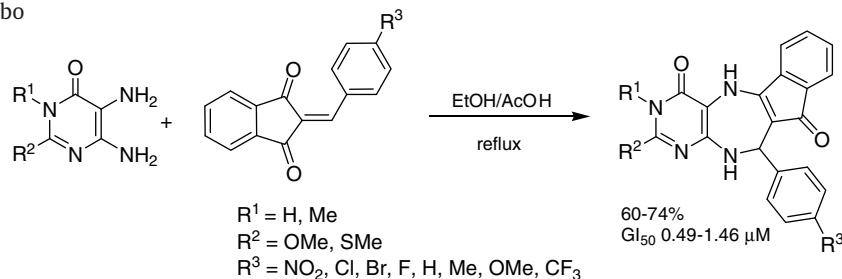
Uma Sharan Singh, Ravi Shankar, Avinash Kumar, Ritu Trivedi, Naibedya Chattopadhyay, Nishi Shakya, Shraddha Palne, Suman Gupta, K. Hajela*



Synthesis of new indeno[1,2-*e*]pyrimido[4,5-*b*][1,4]diazepine-5,11-diones as potential antitumor agents

pp 8492–8500

Braulio Insuasty*, Fabian Orozco, Carolina Lizarazo, Jairo Quiroga, Rodrigo Abonia, Mike Hursthouse, Manuel Nogueras, Justo Cobo

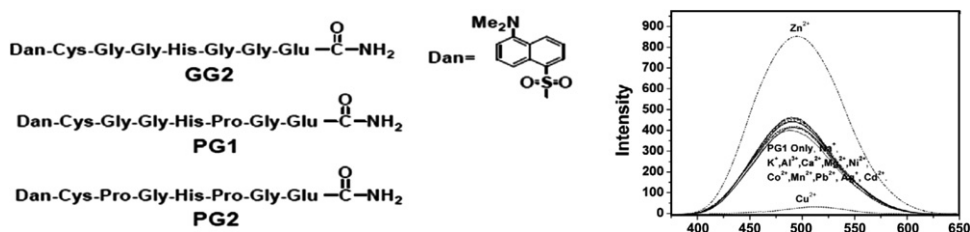


Novel indeno[1,2-*e*]pyrimido[4,5-*b*][1,4]diazepine-5,11-diones were synthesized and screened as antitumorals. Some derivatives exhibited remarkable GI₅₀ values ranging from 0.49 to 1.46 μM , in vitro assay.

Synthesis of highly selective fluorescent peptide probes for metal ions: Tuning selective metal monitoring with secondary structure

pp 8501–8509

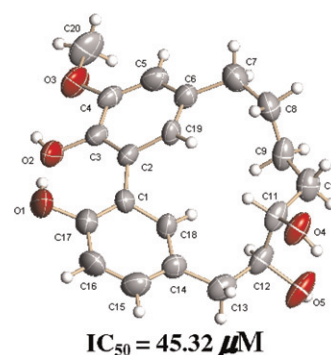
Bishnu Prasad Joshi, Keun-Hyeung Lee*



Cyclic diarylheptanoids from *Myrica nana* inhibiting nitric oxide release

pp 8510–8515

Junfeng Wang, Shasha Dong, Yuehu Wang, Qing Lu, Huimin Zhong, Guanhua Du, Li Zhang*, Yongxian Cheng*

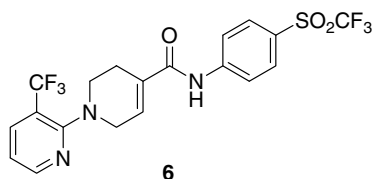


Cyclic diarylheptanoids isolated from *Myrica nana* used for burns were evaluated for their potential on nitric oxide release, with IC₅₀ values of 45–63 μM .

Tetrahydropyridine-4-carboxamides as novel, potent transient receptor potential vanilloid 1 (TRPV1) antagonists

pp 8516–8525

Brian S. Brown*, Ryan Keddy, Guo Zhu Zheng, Robert G. Schmidt, John R. Koenig, Heath A. McDonald, Bruce R. Bianchi, Prisca Honore, Michael F. Jarvis, Carol S. Surowy, James S. Polakowski, Kennan C. Marsh, Connie R. Faltynek, Chih-Hung Lee

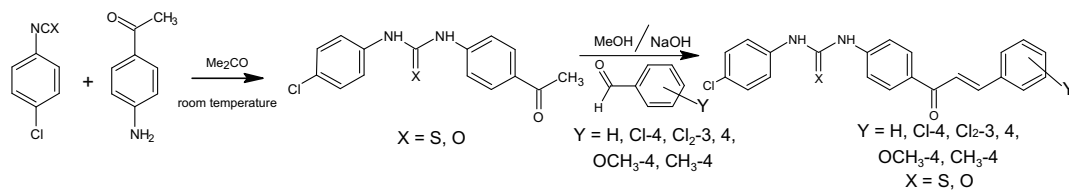


A series of 1,2,3,6-tetrahydropyridyl-4-carboxamides, exemplified by **6**, have been synthesized and evaluated for in vitro TRPV1 antagonist activity, and in vivo analgesic activity in animal pain models.

Synthesis of new 1-phenyl-3-{4-[(2E)-3-phenylprop-2-enoyl]phenyl}-thiourea and urea derivatives with anti-nociceptive activity

pp 8526–8534

Lorena dos Santos*, Luíse Azevedo Lima, Valdir Cechinel-Filho*, Rogério Corrêa, Fátima de Campos Buzzi, Ricardo José Nunes*

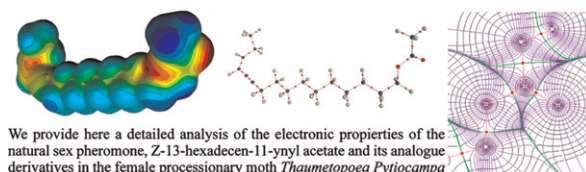


New 1-phenyl-3-{4-[(2E)-3-phenylprop-2-enoyl]phenyl}-thiourea and urea derivatives have been synthesized and tested for their anti-nociceptive activity in different models of pain and compared to some lead compounds.

Theoretical analysis of the electronic properties of the sex pheromone and its analogue derivatives in the female processionary moth *Thaumetopoea pytiocampa*

pp 8535–8545

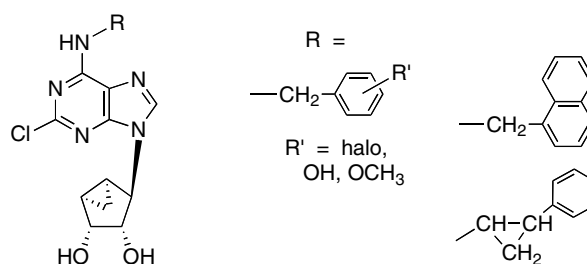
Ester R. Chamorro, Alfredo F. Sequeira, M. Fernanda Zalazar, Nélida M. Peruchena*



Selective A₃ adenosine receptor antagonists derived from nucleosides containing a bicyclo[3.1.0]hexane ring system

pp 8546–8556

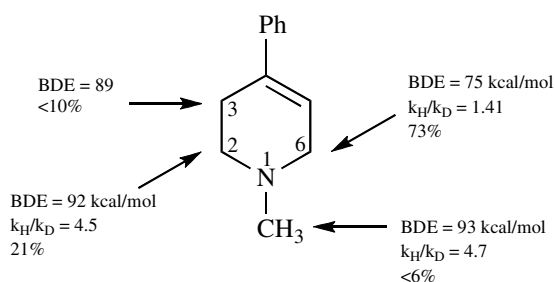
Artem Melman, Ben Wang, Bhalchandra V. Joshi, Zhan-Guo Gao, Sonia de Castro, Cara L. Heller, Soo-Kyung Kim, Lak Shin Jeong, Kenneth A. Jacobson*



The *tert*-butoxyl radical mediated hydrogen atom transfer reactions of the Parkinsonian proneurotoxin 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine and selected tertiary amines

pp 8557–8562

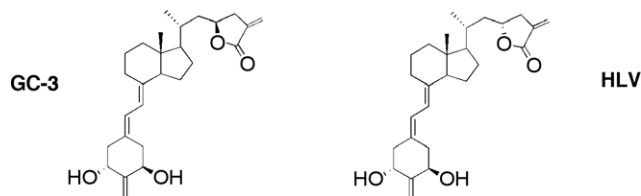
N. Kamrudin Suleman*, Joey Flores, James M. Tanko, Emre Mehmet Isin, Neal Castagnoli Jr.



Synthesis and biological properties of 2-methylene-19-nor-25-dehydro-1 α -hydroxyvitamin D₃-26,23-lactones—weak agonists

pp 8563–8573

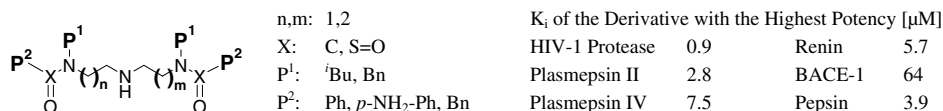
Grazia Chiellini, Pawel Grzywacz, Lori A. Plum, Rafal Barycki, Margaret Clagett-Dame, Hector F. DeLuca *



Achiral oligoamines as versatile tool for the development of aspartic protease inhibitors

pp 8574–8586

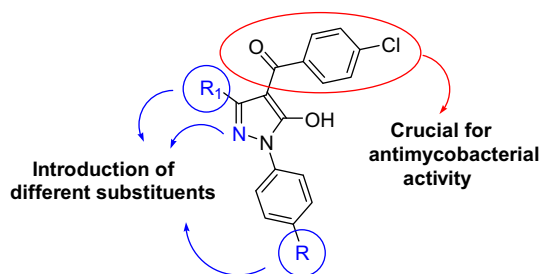
Andreas Blum, Jark Böttcher, Benedikt Sammet, Torsten Luksch, Andreas Heine, Gerhard Klebe, Wibke E. Diederich *



Synthesis, biological evaluation and SAR study of novel pyrazole analogues as inhibitors of *Mycobacterium tuberculosis*

pp 8587–8591

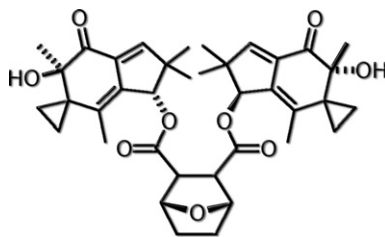
Daniele Castagnolo, Alessandro De Logu, Marco Radi, Beatrice Bechi, Fabrizio Manetti, Matteo Magnani, Sibilla Supino, Rita Meleddu, Lorenza Chisu, Maurizio Botta *



Conjugates of the fungal cytotoxin illudin M with improved tumour specificity

pp 8592–8597

Rainer Schobert*, Bernhard Biersack, Sebastian Knauer, Matthias Ocker

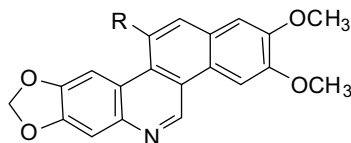


Compared with illudin M, its esters with demethylcantharidinic acid (endothall) and 2,2'-bipyridyl-5,5'-dicarboxylic acid retained the high cytotoxicity while displaying an improved specificity for cells of Panc-1 pancreas and HT-29 colon carcinomas over non-malignant human fibroblasts.

11-Substituted 2,3-dimethoxy-8,9-methylenedioxybenzo[i]phenanthridine derivatives as novel topoisomerase I-targeting agents

pp 8598–8606

Wei Feng, Mavurapu Satyanarayana, Yuan-Chin Tsai, Angela A. Liu, Leroy F. Liu, Edmond J. LaVoie*

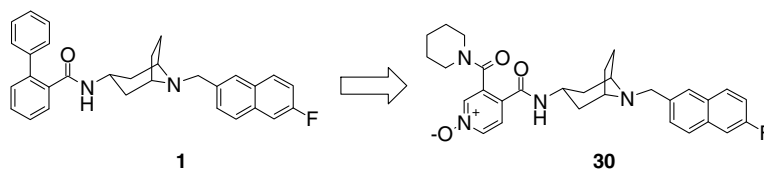


R = formyl, hydroxymethyl, aminoalkyl derivatives, aminocarboxy derivatives

Design and synthesis of 6-fluoro-2-naphthyl derivatives as novel CCR3 antagonists with reduced CYP2D6 inhibition

pp 8607–8618

Ippei Sato*, Koichiro Morihira, Hiroshi Inami, Hirokazu Kubota, Tatsuaki Morokata, Keiko Suzuki, Yosuke Iura, Aiko Nitta, Takayuki Imaoka, Toshiya Takahashi, Makoto Takeuchi, Mitsuaki Ohta, Shin-ichi Tsukamoto

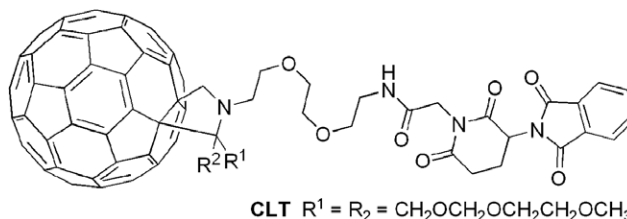


The 6-fluoro-2-naphthylmethyl derivatives were prepared, and their inhibitory activities against CCR3 and CYP2D6 were evaluated.

Development and biological evaluation of C₆₀ fulleropyrrolidine-thalidomide dyad as a new anti-inflammation agent

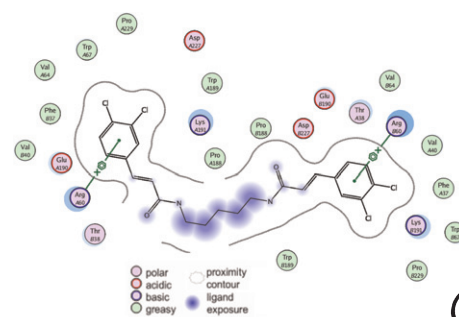
pp 8619–8626

Sheng-Tung Huang*, Chia-Shin Ho, Chun-Mao Lin, Hsu-Wei Fang, Yi-Xiang Peng

We designed and synthesized new anti-inflammation agent C₆₀ fulleropyrrolidine-thalidomide dyad capable of simultaneous inhibition of LPS-induced NO and TNF- α production; we also conducted the biochemical investigations on its anti-inflammatory mechanism.**Synthesis and pharmacological evaluation of bis-3-(3,4-dichlorophenyl)acrylamide derivatives as glycogen phosphorylase inhibitors**

pp 8627–8634

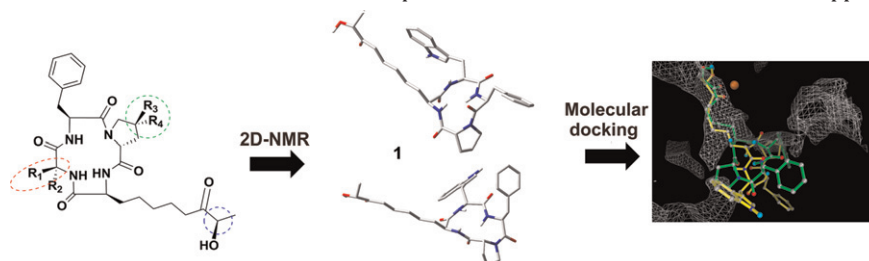
Kenichi Onda*, Ryota Shiraki, Yasuhiro Yonetoku, Kazuhiro Momose, Naoko Katayama, Masaya Orita, Tomohiko Yamaguchi, Mitsuaki Ohta, Shin-ichi Tsukamoto

(2*E*,2'*E*)-*N,N'*-Pentane-1,5-diylbis[3-(3,4-dichlorophenyl)acrylamide] and its heteroatom-containing analogues are potent inhibitors of human liver glycogen phosphorylase α (hLGP α), which binds in the solvent cavity at the hLGP α dimer interface.

Molecular modeling studies toward the structural optimization of new cyclopeptide-based HDAC inhibitors modeled on the natural product FR235222

pp 8635–8642

Simone Di Micco, Stefania Terracciano, Ines Bruno, Manuela Rodriquez, Raffaele Riccio, Maurizio Taddei, Giuseppe Bifulco*



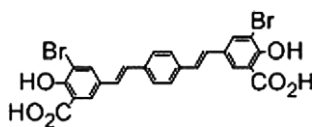
Structural analysis is performed on a small collection of FR235222 simplified analogues to gain guidelines for the rational design of new derivatives with putative higher affinity for HDAC.



Derivatives of 1,4-bis(3-hydroxycarbonyl-4-hydroxyl)styrylbenzene as PTP1B inhibitors with hypoglycemic activity

pp 8643–8652

Suja Shrestha, Bharat Raj Bhattarai, Bhooshan Kafle, Keun-Hyeung Lee, Hyeongjin Cho*

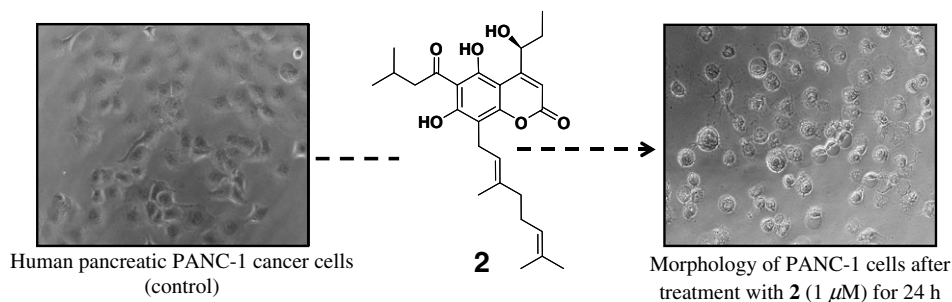


PTP1B inhibitor with hypoglycemic activity.

Novel anticancer agents, kayeassamins C–I from the flower of *Kayea assamica* of Myanmar

pp 8653–8660

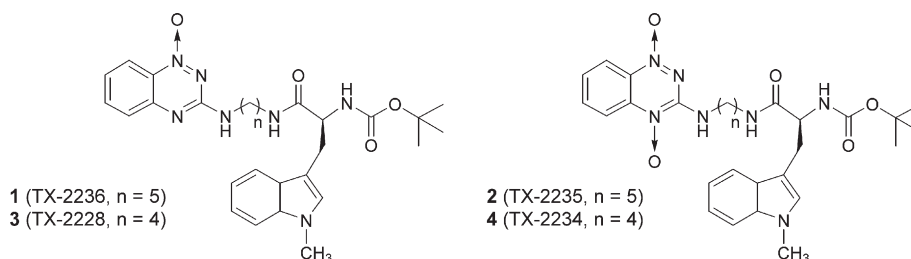
Nwet Nwet Win, Suresh Awale, Hiroyasu Esumi, Yasuhiro Tezuka, Shigetoshi Kadota*



Synthesis and biological activity of 1-methyl-tryptophan-tirapazamine hybrids as hypoxia-targeting indoleamine 2,3-dioxygenase inhibitors

pp 8661–8669

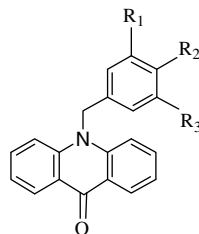
Hitomi Nakashima, Yoshihiro Uto, Eiji Nakata, Hideko Nagasawa, Kazuhiro Ikkyu, Noriko Hiraoka, Kouichiro Nakashima, Yuki Sasaki, Hiroshi Sugimoto, Yoshitsugu Shiro, Toshihiro Hashimoto, Yasuko Okamoto, Yoshinori Asakawa, Hitoshi Hori*



Synthesis and potent antileukemic activities of 10-benzyl-9(10H)-acridinones

pp 8670–8675

Chunmei Gao, Yuyang Jiang*, Chunyan Tan, Xuyu Zu, Huachen Liu, Derong Cao*

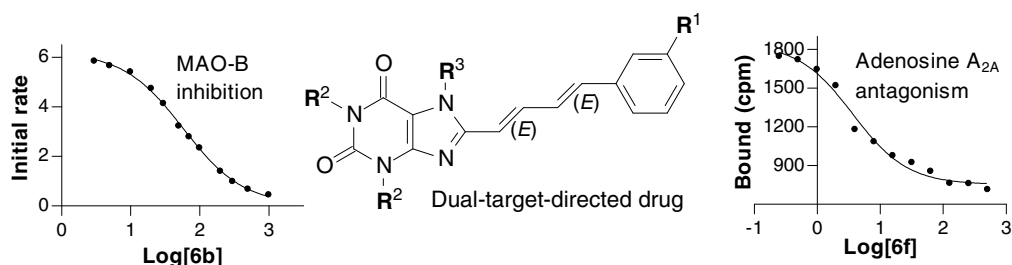


A novel series of 10-benzyl-9(10H)-acridinones were synthesized and evaluated as potent antileukemic activities. Structure–activity relationships are also studied.

Dual inhibition of monoamine oxidase B and antagonism of the adenosine A_{2A} receptor by (E,E)-8-(4-phenylbutadien-1-yl)caffeine analogues

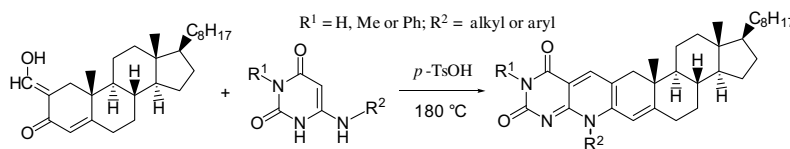
pp 8676–8684

Judey Pretorius, Sarel F. Malan, Neal Castagnoli Jr., Jacobus J. Bergh, Jacobus P. Petzer*

**Synthesis, biological active molecular design, and molecular docking study of novel deazaflavin–cholestane hybrid compounds**

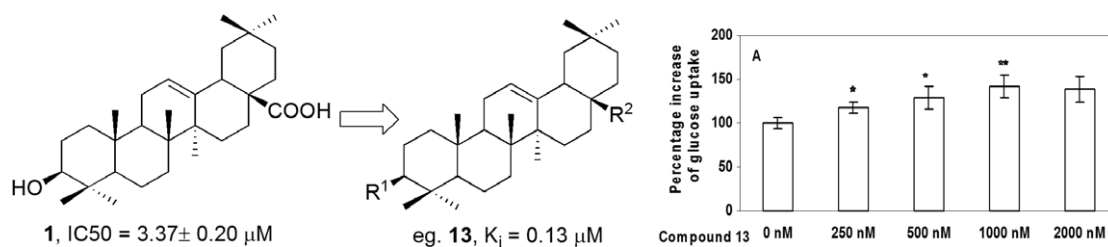
pp 8685–8696

Ajaya R. Shrestha, Takashi Shindo, Noriyuki Ashida, Tomohisa Nagamatsu*

**Oleanolic acid and its derivatives: New inhibitor of protein tyrosine phosphatase 1B with cellular activities**

pp 8697–8705

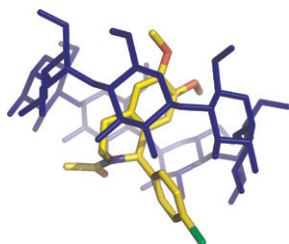
Yi-Nan Zhang, Wei Zhang, Di Hong, Lei Shi, Qiang Shen, Jing-Ya Li, Jia Li*, Li-Hong Hu*



Improvement of water solubility of non-competitive AMPA receptor antagonists by complexation with β -cyclodextrin

pp 8706–8712

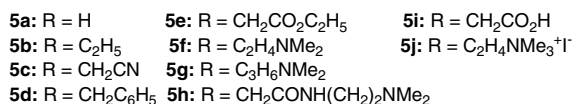
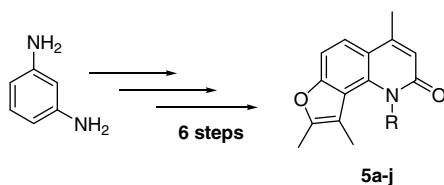
Rosanna Stancanelli*, Vincenza Crupi, Laura De Luca, Paola Ficarra, Rita Ficarra, Rosaria Gitto, Marta Guardo, Nunzio Iraci, Domenico Majolino, Silvana Tommasini, Valentina Venuti



Novel angular furoquinolinones bearing flexible chain as antitumor agent: Design, synthesis, cytotoxic evaluation, and DNA-binding studies

pp 8713–8718

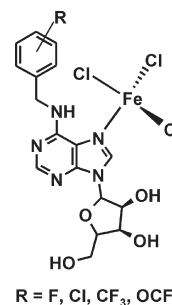
Lijuan Xie, Xuhong Qian*, Jingnan Cui*, Yi Xiao, Kewei Wang, Peichun Wu, Liying Cong



Novel iron complexes bearing N6-substituted adenosine derivatives: Synthesis, magnetic, ⁵⁷Fe Mössbauer, DFT, and in vitro cytotoxicity studies

pp 8719–8728

Zdeněk Trávníček*, Jiří Mikulík, Michal Čajan, Radek Zbořil, Igor Popa

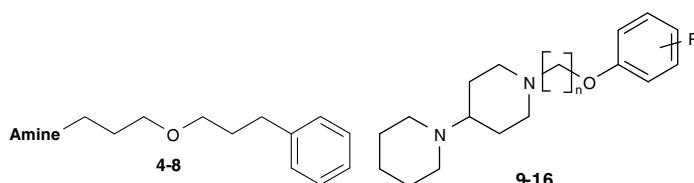


The prepared iron complexes showed notable in vitro cytotoxicity against *HOS*, *K-562* and *MCF-7* human cancer cell lines in some cases. Spectral, Mössbauer and magnetic studies revealed the presence of four different spin and/or valency states of iron cations in the complexes. Geometries of all possible structures were optimized on the DFT level.

Piperidine variations in search for non-imidazole histamine H₃ receptor ligands

pp 8729–8736

Dorota Łażewska, Kamil Kuder, Xavier Ligneau, Jean-Charles Schwartz, Walter Schunack, Holger Stark, Katarzyna Kieć-Kononowicz*

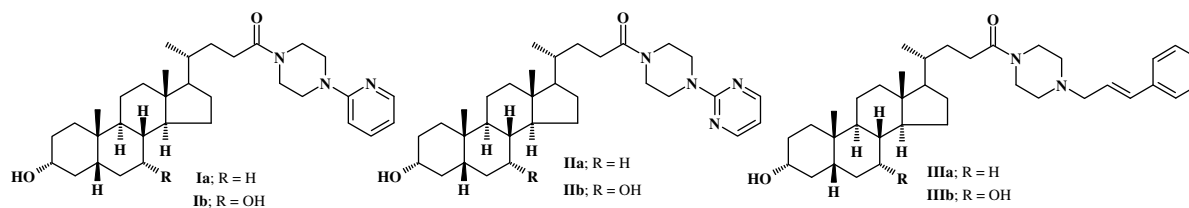


New aliphatic (**4–8**) and aromatic (**9–16**) ethers were prepared and evaluated for binding affinity at the histamine H₃ receptor. The bipiperidine derivative **16** has been found as the most potent compound in vitro (hH₃K_i = 100 nM). Selected compounds tested in vivo did not show potencies up to > 10 mg/kg po in mice.

New lithocholic and chenodeoxycholic piperazinylcarboxamides with antiproliferative and pro-apoptotic effects on human cancer cell lines

pp 8737–8744

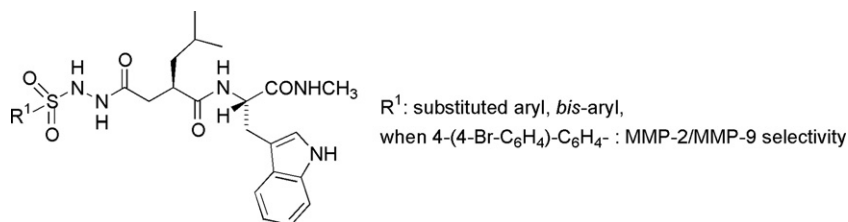
Laïla El Kihel*, Monique Clément, Marc-Antoine Bazin, Géraldine Descamps, Mohamed Khalid, Sylvain Rault



Introduction of the 4-(4-bromophenyl)benzenesulfonyl group to hydrazide analogs of Ilomastat leads to potent gelatinase B (MMP-9) inhibitors with improved selectivity

pp 8745–8759

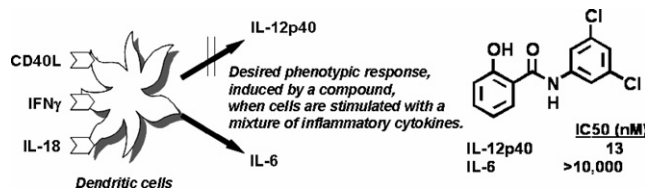
Gwennaél LeDour, Gautier Moroy, Matthieu Rouffet, Erika Bourguet, Dominique Guillaume, Martine Decarme, Haquima ElMourabit, Franck Augé, Alain J. P. Alix, Jean-Yves Laronze, Georges Bellon, William Hornebeck, Janos Sapi*



Salicylanilides: Selective inhibitors of interleukin-12p40 production

pp 8760–8764

Michael E. Brown, Jeffrey N. Fitzner, Tracey Stevens, Wilson Chin, Clifford D. Wright, Jim P. Boyce*



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*Corresponding author

i⁺ Supplementary data available via ScienceDirect

COVER

An insight into biologically relevant chemical space showing the scaffolds of potential natural-product based inhibitors orbiting their target, the protein structure of protein 11-beta steroid dehydrogenase (PDB code 1xu7). Graphic produced using Pymol (<http://www.pymol.org>). [M. A. Koch, A. Schuffenhauer, M. Scheck, S. Wetzel, M. Casaulta, A. Odermatt, P. Ertl, H. Waldmann, Charting biologically relevant chemical space: A structural classification of natural products (SCONP), *PNAS* **2005**, 102, 17272–17277 and S. Wetzel, H. Waldmann, Cheminformatic analysis of natural products and their chemical space, *Chimia* **2007**, 61(6), 355–360].

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